Amendments to the Specification:

Please amend the specification of record as follows. No new matter has been added.

Please amend the paragraph spanning pages 15 and 16, between lines 23 on page 15 and line 23 on page 16, as follows.

One setup for treating tissue with ultrasound is shown in Figure 2. An ultrasound generator causes a transducer to emit ultrasound waves of a desired intensity and frequency, with a range of intensities and frequencies being used if desired. Tissue is placed in solution together with the transducer and is exposed to the ultrasound waves produced by the transducer. Although it is quite feasible to simply use a transducer and a piece of tissue and to expose the tissue to ultrasound at a desired frequency and intensity for a specific length of time, the method can be improved by including one or more sensors to follow the reaction, e.g., fixation, impregnation with paraffin, etc. Sensor A is used to monitor the intensity of the ultrasound which passes through the tissue. The intensity will change over time as the reaction, e.g., impregnation with paraffin, proceeds. The signal from sensor A can be fed into a central processing unit (CPU) which in turn regulates the ultrasound generator and can be programmed to adjust the intensity and/or frequency of the ultrasound being produced by the transducer. It can be desirable to change the intensity and/or frequency as the process proceeds, e.g., as the tissue takes up more paraffin or as it becomes more dehydrated, depending on the process being performed. A second sensor (sensor B) can also be used if desired. Sensor B measures the ultrasound intensity in the solvent or solution in which the tissue is placed. It measures this in a region such that it measures the intensity of ultrasound which has not passed through the tissue. This effectively serves as a baseline measurement which will depend not only on the signal produced by the transducer but also depends upon the specific solvent or solution. Consequently it can be used to account for the use of different solvents or solutions. As with sensor A, the signal received by sensor B can be fed into a CPU which controls the ultrasound generator. The use of a third sensor can also be accommodated. For example, sensor C, <u>which may be a temperature sensor, such as an infrared temperature sensor,</u> can be used to monitor a physical parameter of the tissue during the processing of the tissue, e.g., sensor C

can be used to measure the temperature of the tissue. Again, this information can be fed back to the CPU and be used to regulate the ultrasound generator throughout the time course of the process. For example, if the temperature of the tissue was getting too high a signal could be sent to decrease the intensity of the signal, to alter the pulsing of the signal, or to turn off the signal for a time until the temperature decreased to a specified temperature. Further sensors can be added to the system as desired. Furthermore, one can use any one sensor without the others, e.g., sensor C as described above to measure a physical parameter could be used alone in the absence of sensors A and B. Also, as noted above, it is unnecessary to use any sensors although it is preferable to do so because the feedback system enabled by the sensors helps prevent overprocessing or underprocessing of the tissue.

Please amend the last paragraph at page 16, between lines 24 and 31, as follows.

Some examples of the above processes are shown as flow diagrams. Figure 3A shows a flow diagram for a system utilizing a single sensor. An ultrasound generator controls an ultrasound transducer which emits ultrasound of a desired frequency and power. The ultrasound passes through a tissue and is detected by a sensor. The sensor sends a signal to a CPU which analyzes the signal and, if desired, digitizes the signal, and in accord with a program controls the output of the ultrasound generator. Figure 3B is a flow diagram of a system similar to that shown in Figure 3A except that the sensor, which may be a temperature sensor, such as an infrared temperature sensor, measures a physical parameter of the tissue sample, e.g., size, type, density, temperature, etc.